

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 102334/KCS/DG	FOR FURTHER ACTION <small>see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.</small>	
International application No. PCT/EP 00/ 06119	International filing date (day/month/year) 30/06/2000	(Earliest) Priority Date (day/month/year) 02/07/1999
Applicant NOKIA NETWORKS OY		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 2 sheets.
☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).
- b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing:
- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

2. ☐ Certain claims were found unsearchable (See Box I).

3. ☐ Unity of invention is lacking (see Box II).

4. With regard to the title:

- ☐ the text is approved as submitted by the applicant.
- ☒ the text has been established by this Authority to read as follows:

METHOD AND DEVICE FOR AUTOMATIC INFORMATION SEARCH IN A NETWORK

5. With regard to the abstract,

- ☒ the text is approved as submitted by the applicant.
- ☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No.

- ☐ as suggested by the applicant.
- ☐ because the applicant failed to suggest a figure.
- ☐ because this figure better characterizes the invention.
- ☒ None of the figures.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 00/06119

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9912104 A	11-03-1999	FI 973600 A	05-03-1999
		AU 9740398 A	22-03-1999
		BR 9812172 A	18-07-2000
		GB 2344909 A	21-06-2000


REC'D 31 OCT 2001

WIPO PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

14

Applicant's or agent's file reference 102334/KCS/DG		FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP00/06119	International filing date (day/month/year) 30/06/2000	Priority date (day/month/year) 02/07/1999	
International Patent Classification (IPC) or national classification and IPC H04L29/06			
Applicant NOKIA NETWORKS OY			
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of 6 sheets.</p>			
<p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input checked="" type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input checked="" type="checkbox"/> Certain defects in the international application VIII <input checked="" type="checkbox"/> Certain observations on the international application 			
Date of submission of the demand 04/01/2001		Date of completion of this report 29.10.2001	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized officer Niculiu, R Telephone No. +49 89 2399 7437	



INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/EP00/06119

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, pages:

1,3-15,17,18	as originally filed	
2,2a,16	with telefax of	12/10/2001

Claims, No.:

13-21,28-52	as originally filed	
1-12,22-27	with telefax of	12/10/2001

Drawings, sheets:

1/2,2/2	as originally filed
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2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/EP00/06119

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

- ☐ the entire international application.
- ☒ claims Nos. 27 - 50, 52.

because:

- ☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (*specify*):
- ☒ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. 27 - 50, 52 are so unclear that no meaningful opinion could be formed (*specify*):
see separate sheet
- ☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.
- ☐ no international search report has been established for the said claims Nos. .

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

- ☐ the written form has not been furnished or does not comply with the standard.
- ☐ the computer readable form has not been furnished or does not comply with the standard.

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/EP00/06119

citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	
	No:	Claims	1 - 26, 51
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1 - 26, 51
Industrial applicability (IA)	Yes:	Claims	1 - 26, 51
	No:	Claims	

2. Citations and explanations see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:
see separate sheet

Re Item III

See Item VIII, points 1.1 - 1.2.

Re Item V

1. The subject matter of **claim 1 is not new** (Article 33 (2) PCT).

D1 = WO 99 12104 A (TELEFONAKTIEBOLAGET LM ERICSSON) 11 March 1999 (1999-03-11), which is considered to represent the most relevant state of the art, discloses all the features set out in claim 1 :

- ◆ a terminal for use with an information network (page 3, paragraph 2)
- ◆ the terminal comprising a register for storing content information defining the content of one or more sites in the information network (page 2, lines 13-17)
- ◆ to enable automatic location of sites having content corresponding to the content defining information (page 3, paragraph 5 and page 5, lines 4-10).

The Applicants opinion that D1 does not disclose a terminal comprising a register for storing content information defining the content of one or more sites in the information network to enable the location of sites having corresponding content **can not be shared**.

D1 shows an integrated portable unit comprising a CPU, **necessary memory means**, a display, a keypad and means for mobile communications and web browsing (page 2, lines 14-17), just like Nokia's "Communicator".

On page 4, last line and page 5, lines 1-2 it is disclosed that the invention provides an eased and **automatic** access to information, preferably in the form of WWW documents.

Moreover, the title of a web page, which is stored together with the URL when bookmarking, **is content defining**.

For this reasons, the Examiners opinion is that claim 1 is neither novel nor inventive over **D1**.

2. The subject matter of method **claim 51** corresponds to the subject matter of system claim 1 and is therefore **also not new** for the same reason.

3. The additional features defined in the **dependent claims 2 - 26** add no novel subject matter to the independent claims as they are also known from **D1** (register arranged to store information on the address, terminal arranged to send a request for address information, terminal has means for permitting the user to select at least one of stored addresses, terminal is a mobile station, terminal has browser capabilities, register provides bookmark storage).

Re Item VII

1. The independent claims are **not** in the two-part form, with those features known in combination from **D1** being placed in the preamble (Rule 6.3 (b) (i) PCT) and with the remaining features being included in the characterising part (Rule 6.3 (b) (ii) PCT).
2. The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).

Re Item VIII

- 1.1 Although claims 1, 27, 38, 43, 47, 49 and 50 have been drafted as separate independent claims, they appear to relate effectively to the same subject-matter and to differ from each other only with regard to the definition of the subject-matter for which protection is sought and in respect of the terminology used for the features of that subject-matter. The aforementioned claims therefore lack conciseness. Moreover, lack of clarity of the claims as a whole arises, since the plurality of independent claims makes it difficult, if not impossible, to determine the matter for which protection is sought, and places an undue burden on others seeking to establish the extent of the protection.

Hence, claims 1, 27, 38, 43, 47, 49 and 50 do not meet the requirements of Article 6 PCT.

- 1.2 The above stated objection also applies to independent claims 51 and 52. Hence, claims 51 and 52 **do not meet the requirements of Article 6 PCT.**

10/019119

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531 Rec'd PC

21 DEC 2001

allow the user to access a website which includes train time table information for the city of London. This is useful if the user, for example lives in London. However, if the user were to go to Paris, the bookmark would still take the user to the website listing the train times for London. This is then of little use to the user when he is in Paris and requires train times for Paris.

WO 99/12104 relates to a method and an arrangement for finding information in a communication system comprising a circuit switch network, and packet switch network and a link therebetween. A user related location information is obtained by the circuit switch network and the packet switch network is subsequently utilised using said location information for finding the desired information. The invention relates further to a mobile station to be used in accordance with the invention.

Summary of the Invention

It is an aim of embodiments of the present invention to address the problems described hereinbefore.

According to one aspect of the present invention there is provided a terminal for use with an information network, said terminal comprising a register for storing content information defining the content of one or more sites in said information network to enable automatic location of sites having content corresponding to the content defining information.

This information can be used to assist in finding other sites corresponding to the content information defining the content of the site.

AMENDED SHEET

Filed 12/10/2001

12/10/2001

2a

Preferably, the register is arranged to store information on the address of at least one site having the content defined by the content information. The terminal may be arranged to send a request for address information on a site which has a content defined by the content information. The request for the address information may request the address of a site which has the content defined by the content information and which additionally relates to the current location of the terminal. Alternatively, the request for address information

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Empf.zeit: 12/10/2001 14:30

Emot. nr. 701 D ONE

given set may be updated at the same time or at different times.

In one embodiment of the invention, one or more trigger areas may be provided in association with one or more bookmarks. When a location dependent bookmark is provided from the bookmark service register, the bookmark service register may provide one or more trigger areas associated with that bookmark. Where such trigger areas are provided, the position of the mobile station is checked periodically to see it has left one trigger area and/or entered another trigger area. The periodic checking of the mobile station position may involve geographic positioning procedures. The trigger areas may also define how often the position of the mobile station is checked. The frequency of checking may be deduced automatically by the mobile based on the size of the trigger area. The trigger areas may be geographic areas defined by co-ordinates, individual cells, cell groups, location areas, location area groups, networks or groups of networks, a country, set of countries, etc.

Whenever the user moves outside a given trigger area, the bookmarks corresponding to the trigger area are sent to the bookmark service register for updating. Alternatively, the bookmarks may be treated in the browser as old and are indicated as such to the user.

Reference is now made to Figure 4 which shows how a connection is established between a mobile station 6 and a website 16. The mobile station is connected to a base station subsystem 22 which includes a base station. The base station subsystem 22 is in turn connected to a serving GPRS support node SGSN 24 which in turn is connected to a gateway GPRS support node GGSN 26. The gateway GPRS support node GGSN 26

AMENDED SHEET

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CLAIMS:

1. A terminal for use with an information network, said terminal comprising a register for storing content information defining the content of one or more sites in said information network to enable automatic location of sites having content corresponding to the content defining information.
2. A terminal as claimed in claim 1, wherein said register is arranged to store information on the address of at least one site having the content defined by said content information.
3. A terminal as claimed in claim 1 or 2, wherein said terminal is arranged to send a request for address information on a site which has the content defined by said content information.
4. A terminal as claimed in claim 3, wherein said terminal is arranged to send a request for the address of a site which has the content to find by the content information and which additionally relates to the current location of the terminal.
5. A terminal as claimed in claim 3, wherein said terminal is arranged to send a request for the address of a site which has the content defined by the content information and which additionally relates to a predetermined location.
6. A terminal as claimed in claim 4 or 5 when appended to claim 2, wherein the register is arranged to replace the current address with the requested address which is associated with the content information.

AMENDED SHEET

Empf.zeit: 12/10/2001 14:51

Empf. nr.: 1701 0 007

7. A terminal as claimed in claim 4 or 5 and appended to claim 2, wherein the register is arranged to store said requested address along with a home address associated with the same content information.

8. A terminal as claimed in any of claims 4 to 7, wherein said terminal is arranged to select one of a plurality of requested addresses which are associated with the same content information.

9. A terminal as claimed in any one of claims 4 to 7, wherein said terminal is arranged to store a plurality of requested addresses which are associated with the same content information.

10. A terminal as claimed in claim 9, wherein said terminal has means for permitting the user to select at least one of said stored addresses.

11. A terminal as claimed in any one of the preceding claims, wherein said terminal is arranged to request at least one address of at least one site corresponding to content information provided by the terminal in response to occurrence of at least one predetermined event.

12. A terminal as claimed in claim 11, wherein said at least one predetermined event comprises one or more of the following:

change of location area of the terminal; the terminal registering with a new network; the terminal entering a different country; the terminal entering a new geographical location; and the terminal leaving a geographical location.

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22. A terminal as claimed in claim 3 or any claim appended thereto, wherein said terminal is arranged to obtain information as to its position, said information being used to determine if the terminal is in an area associated with a given site.

23. A terminal as claimed in claim 22, wherein the register is arranged to be updated if said terminal is determined to have left said area.

24. A terminal as claimed in claim 22 or 23, wherein the frequency with which the terminal obtains information on its position is dependent on the area associated with a given site.

25. A terminal as claimed in claim 2 or any claim appended thereto, wherein said terminal is arranged to store the said content information defining a site when a user stores in said register the address of that site.

26. A terminal as claimed in any of the previous claims, wherein said terminal is arranged to obtain the said content information defining a site from a classification service when a user stores in said register information on a site selected by the user.

27. A register for use with an information network, said register storing content information, associated address information identifying sites which contain the content defined by said content information and location information identifying the geographic location with which the site defined by said address information is associated.

AMENDED SHEET

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REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

For receiving Office use only

International Application No. **PCT/EP 00 / 06119**

30 JUN 2000

International Filing Date

30. 06. 2000

EUROPEAN PATENT OFFICE

PCT INTERNATIONAL APPLICATION

Name of receiving Office and "PCT International Application"

Applicant's or agent's file reference

(if desired) (12 characters maximum)

102334/KCS/DG

Box No. I TITLE OF INVENTION

A TERMINAL FOR USE WITH AN INFORMATION NETWORK

Box No. II APPLICANT

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

**NOKIA NETWORKS OY
KEILALAHDENTIE 4
02150 ESPOO
FINLAND**

☐ This person is also inventor.

Telephone No.

Facsimile No.

Teleprinter No.

State (that is, country) of nationality:

FI FINLAND

State (that is, country) of residence:

FI FINLAND

This person is applicant for the purposes of:

☐ all designated States

☒ all designated States except the United States of America

☐ the United States of America only

☐ the States indicated in the Supplemental Box

Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

**JUKKA WALLENIUS
KEINUTIE 8 G 41
00940 HELSINKI
FINLAND**

This person is:

☐ applicant only

☒ applicant and inventor

☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:

FI FINLAND

State (that is, country) of residence:

FI FINLAND

This person is applicant for the purposes of:

☐ all designated States

☐ all designated States except the United States of America

☒ the United States of America only

☐ the States indicated in the Supplemental Box

☐ Further applicants and/or (further) inventors are indicated on a continuation sheet.

Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE

The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as:

☒ agent

☐ common representative

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

**STYLE, KELDA CAMILLA KAREN
PAGE WHITE & FARRER
54 DOUGHTY STREET
LONDON WC1N 2LS
UNITED KINGDOM**

Telephone No.

0207 831 7929

Facsimile No.

0207 831 8040

Teleprinter No.

☐ Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.

The demand must be filed directly with the competent International Preliminary Examining Authority or, if two or more Authorities are competent with the one chosen by the applicant. The full name or two-letter code of that Authority may be indicated by the applicant on the line below:
IPEA/

COPY

PCT

DEMAND

CHAPTER II

under Article 31 of the Patent Cooperation Treaty.
The undersigned requests that the international application specified below be the subject of international preliminary examination according to the Patent Cooperation Treaty and hereby elects all eligible States (except where otherwise indicated).

For International Preliminary Examining Authority use only	
Identification of IPEA	Date of receipt of DEMAND
Box No. I IDENTIFICATION OF THE INTERNATIONAL APPLICATION	
International application No. PCT/EP00/06119	Applicant's or agent's file reference 102334/DJW (Earliest) Priority date (day/month/year) 02.07.99
International filing date (day/month/year) 30/06/00	
Title of invention A Terminal for Use in an Information Network	
Box No. II APPLICANT(S)	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.) Nokia Networks Oy Keilalahdentie 4 02150 Espoo Finland	Telephone No.: Facsimile No.: Teleprinter No.:
State (that is, country) of nationality: Finland (FI)	State (that is, country) of residence: Finland (FI)
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.) WALLENIUS, Jukka Keinutie 8 G 41 00940 Helsinki Finland	
State (that is, country) of nationality: Finland (FI)	State (that is, country) of residence: Finland (FI)
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)	
State (that is, country) of nationality:	State (that is, country) of residence:
<input type="checkbox"/> Further applicants are indicated on a continuation sheet.	

Form PCT/IPEA/401 (first sheet) (July 1998; reprint July 2000)

See Notes to the demand form

Box No. III AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE

The following person is ☒ agent ☐ common representative
 and ☒ has been appointed earlier and represents the applicant(s) also for international preliminary examination.
☐ is hereby appointed and any earlier appointment of (an) agent(s)/common representative is hereby revoked.
☐ is hereby appointed, specifically for the procedure before the International Preliminary Examining Authority, in addition to the agent(s)/common representative appointed earlier.

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)*

WILLIAMS, David John
 PAGE WHITE & FARRER
 54 Doughty Street
 London WC1N 2LS
 United Kingdom

Telephone No.:

020 7831-7929

Facsimile No.:

020 7831-8040

Teleprinter No.:

8955681

☐ Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.

Box No. IV BASIS FOR INTERNATIONAL PRELIMINARY EXAMINATION

Statement concerning amendments: *

- The applicant wishes the international preliminary examination to start on the basis of:
 - ☒ the international application as originally filed
 - the description ☐ as originally filed
☐ as amended under Article 34
 - the claims ☐ as originally filed
☐ as amended under Article 19 (together with any accompanying statement)
☐ as amended under Article 34
 - the drawings ☐ as originally filed
☐ as amended under Article 34
 - ☐ The applicant wishes any amendment to the claims under Article 19 to be considered as reversed.
 - ☐ The applicant wishes the start of the international preliminary examination to be postponed until the expiration of 20 months from the priority date unless the International Preliminary Examining Authority receives a copy of any amendments made under Article 19 or a notice from the applicant that he does not wish to make such amendments (Rule 69.1(d)). *(This check-box may be marked only where the time limit under Article 19 has not yet expired.)*
- * Where no check-box is marked, international preliminary examination will start on the basis of the international application as originally filed or, where a copy of amendments to the claims under Article 19 and/or amendments of the international application under Article 34 are received by the International Preliminary Examining Authority before it has begun to draw up a written opinion or the international preliminary examination report, as so amended.

Language for the purposes of international preliminary examination: English

☒ which is the language in which the international application was filed.
☐ which is the language of a translation furnished for the purposes of international search.
☐ which is the language of publication of the international application.
☐ which is the language of the translation (to be) furnished for the purposes of international preliminary examination.

Box No. V ELECTION OF STATES

The applicant hereby elects all eligible States (that is, all States which have been designated and which are bound by Chapter II of the PCT)

excluding the following States which the applicant wishes not to elect:

Box No. VI CHECK LIST

The demand is accompanied by the following elements, in the language referred to in Box No. IV, for the purposes of international preliminary examination:

- | | | |
|--|---|--------|
| 1. translation of international application | : | sheets |
| 2. amendments under Article 34 | : | sheets |
| 3. copy (or, where required, translation) of amendments under Article 19 | : | sheets |
| 4. copy (or, where required, translation) of statement under Article 19 | : | sheets |
| 5. letter | : | sheets |
| 6. other (specify) | : | sheets |

For International Preliminary
Examining Authority use only

received	not received
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<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

The demand is also accompanied by the item(s) marked below:

- | | |
|--|---|
| 1. <input checked="" type="checkbox"/> fee calculation sheet | 4. <input type="checkbox"/> statement explaining lack of signature |
| 2. <input type="checkbox"/> separate signed power of attorney | 5. <input type="checkbox"/> nucleotide and/or amino acid sequence listing in computer readable form |
| 3. <input type="checkbox"/> copy of general power of attorney, reference number, if any: | 6. <input type="checkbox"/> other (specify): |

Box No. VII SIGNATURE OF APPLICANT, AGENT OR COMMON REPRESENTATIVE

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the demand).

WILLIAMS, David John - Authorised Representative

For International Preliminary Examining Authority use only

1. Date of actual receipt of DEMAND:

2. Adjusted date of receipt of demand due to CORRECTIONS under Rule 60.1(b):

3. ☐ The date of receipt of the demand is AFTER the expiration of 19 months from the priority date and item 4 or 5, below, does not apply.

☐ The applicant has been informed accordingly.

4. ☐ The date of receipt of the demand is WITHIN the period of 19 months from the priority date as extended by virtue of Rule 80.5.

5. ☐ Although the date of receipt of the demand is after the expiration of 19 months from the priority date, the delay in arrival is EXCUSED pursuant to Rule 82.

For International Bureau use only

Demand received from IPEA on:

PCT

CHAPTER II

FEE CALCULATION SHEET

Annex to the Demand for international preliminary examination

<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">International application No.</td> <td>PCT/EP00/06119</td> </tr> <tr> <td>Applicant's or agent's file reference</td> <td>102334/DJW</td> </tr> </table>	International application No.	PCT/EP00/06119	Applicant's or agent's file reference	102334/DJW	<div style="border: 1px solid black; padding: 5px;"> <p>For International Preliminary Examining Authority use only</p> <p>Date stamp of the IPEA</p> </div>														
International application No.	PCT/EP00/06119																		
Applicant's or agent's file reference	102334/DJW																		
<p>Applicant</p> <p style="text-align: center;">Nokia Networks Oy</p>																			
<p>Calculation of prescribed fees</p> <table style="width: 100%;"> <tr> <td style="width: 60%;">1. Preliminary examination fee</td> <td style="width: 20%; text-align: center;">EUR 1533</td> <td style="width: 20%; text-align: center;">P</td> </tr> <tr> <td colspan="3" style="height: 20px;"></td> </tr> <tr> <td>2. Handling fee <i>(Applicants from certain States are entitled to a reduction of 75% of the handling fee. Where the applicant is (or all applicants are) so entitled, the amount to be entered at H is 25% of the handling fee.)</i></td> <td style="text-align: center;">EUR 147</td> <td style="text-align: center;">H</td> </tr> <tr> <td colspan="3" style="height: 20px;"></td> </tr> <tr> <td>3. Total of prescribed fees Add the amounts entered at P and H and enter total in the TOTAL box.....</td> <td style="text-align: center;">EUR 1680</td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">TOTAL</td> <td></td> </tr> </table>		1. Preliminary examination fee	EUR 1533	P				2. Handling fee <i>(Applicants from certain States are entitled to a reduction of 75% of the handling fee. Where the applicant is (or all applicants are) so entitled, the amount to be entered at H is 25% of the handling fee.)</i>	EUR 147	H				3. Total of prescribed fees Add the amounts entered at P and H and enter total in the TOTAL box.....	EUR 1680			TOTAL	
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<p>Deposit Account Authorization <i>(this mode of payment may not be available at all IPEAs)</i></p> <p>The IPEA/ _____ <input checked="" type="checkbox"/> is hereby authorized to charge the total fees indicated above to my deposit account.</p> <p style="margin-left: 100px;"><input checked="" type="checkbox"/> <i>(this check-box may be marked only if the conditions for deposit accounts of the IPEA so permit)</i> is hereby authorized to charge any deficiency or credit any overpayment in the total fees indicated above to my deposit account.</p> <table style="width: 100%;"> <tr> <td style="width: 33%;">2805.0076</td> <td style="width: 33%; text-align: center;">3 January 2001</td> <td style="width: 33%;"></td> </tr> <tr> <td>Deposit Account Number</td> <td>Date (day/month/year)</td> <td>Signature</td> </tr> </table>		2805.0076	3 January 2001		Deposit Account Number	Date (day/month/year)	Signature												
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PATENT COOPERATION TREATY

WO 01/03403
PCT/EP00/0611

PCT

NOTICE INFORMING THE APPLICANT OF THE COMMUNICATION OF THE INTERNATIONAL APPLICATION TO THE DESIGNATED OFFICES

(PCT Rule 47.1(c), first sentence)

From the INTERNATIONAL BUREAU

To:

STYLE, Kelda, Camilla, Karen
Page White & Farrer
54 Doughty Street
London WC1N 2LS
ROYAUME-UNI

RECEIVED

19 JAN 2001

Ans'd

Date of mailing (day/month/year) 11 January 2001 (11.01.01)		
Applicant's or agent's file reference 102334/KCS/DG		
IMPORTANT NOTICE		
International application No. PCT/EP00/06119	International filing date (day/month/year) 30 June 2000 (30.06.00)	Priority date (day/month/year) 02 July 1999 (02.07.99)
Applicant NOKIA NETWORKS OY et al		

1. Notice is hereby given that the International Bureau has communicated, as provided in Article 20, the international application to the following designated Offices on the date indicated above as the date of mailing of this Notice:
AG,AU,KP,KR,MZ,US

In accordance with Rule 47.1(c), third sentence, those Offices will accept the present Notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and no copy of the international application is required to be furnished by the applicant to the designated Office(s).

2. The following designated Offices have waived the requirement for such a communication at this time:
AE,AL,AM,AP,AT,AZ,BA,BB,BG,BR,BY,CA,CH,CN,CR,CU,CZ,DE,DK,DM,EA,EE,EP,ES,FI,GB,GD,GE,GH,GM,HR,HU,ID,IL,IN,IS,JP,KE,KG,KZ,LC,LK,LR,LS,LT,LU,LV,MA,MD,MG,MK,MN,MW,MX,NO,NZ,OA,PL,PT,RO,RU,SD,SE,SG,SI,SK,SL,TJ,TM,TR,TT,TZ,UA,UG,UZ,VN,YU,ZA,ZW
The communication will be made to those Offices only upon their request. Furthermore, those Offices do not require the applicant to furnish a copy of the international application (Rule 49.1(a-bis)).
3. Enclosed with this Notice is a copy of the international application as published by the International Bureau on 11 January 2001 (11.01.01) under No. WO 01/03403

REMINDER REGARDING CHAPTER II (Article 31(2)(a) and Rule 54.2)

If the applicant wishes to postpone entry into the national phase until 30 months (or later in some Offices) from the priority date, a demand for international preliminary examination must be filed with the competent International Preliminary Examining Authority before the expiration of 19 months from the priority date.

It is the applicant's sole responsibility to monitor the 19-month time limit.

Note that only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination.

REMINDER REGARDING ENTRY INTO THE NATIONAL PHASE (Article 22 or 39(1))

If the applicant wishes to proceed with the international application in the national phase, he must, within 20 months or 30 months, or later in some Offices, perform the acts referred to therein before each designated or elected Office.

For further important information on the time limits and acts to be performed for entering the national phase, see the Annex to Form PCT/IB/301 (Notification of Receipt of Record Copy) and Volume II of the PCT Applicant's Guide.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer J. Zahra
Facsimile No. (41-22) 740.14.35	Telephone No. (41-22) 338.83.38

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner
US Department of Commerce
United States Patent and Trademark
Office, PCT
2011 South Clark Place Room
CP2/5C24
Arlington, VA 22202
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 20 February 2001 (20.02.01)	
International application No. PCT/EP00/06119	Applicant's or agent's file reference 102334/KCS/DG
International filing date (day/month/year) 30 June 2000 (30.06.00)	Priority date (day/month/year) 02 July 1999 (02.07.99)
Applicant WALLENIOUS, Jukka	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:

04 January 2001 (04.01.01)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was

☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer <p style="text-align: center;">R. E. Stoffel</p> Telephone No.: (41-22) 338.83.38
--	--

PATENT COOPERATION TREATY

10/019119

PCT

From the INTERNATIONAL BUREAU

NOTIFICATION OF THE RECORDING
OF A CHANGE(PCT Rule 92bis.1 and
Administrative Instructions, Section 422)

To:

STYLE, Kelda, Camilla, Karen
Page White & Farrer
54 Doughty Street
London WC1N 2LS
ROYAUME-UNI

Date of mailing (day/month/year)

29 January 2002 (29.01.02)

Applicant's or agent's file reference

102334/KCS/DG

IMPORTANT NOTIFICATION

International application No.

PCT/EP00/06119

International filing date (day/month/year)

30 June 2000 (30.06.00)

1. The following indications appeared on record concerning:

☒

the applicant

☐

the inventor

☐

the agent

☐

the common representative

Name and Address

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FIN-02150 Espoo
Finland

State of Nationality

FI

State of Residence

FI

Telephone No.

Facsimile No.

Teleprinter No.

2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

☐

the person

☒

the name

☐

the address

☐

the nationality

☐

the residence

Name and Address

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State of Nationality

FI

State of Residence

FI

Telephone No.

Facsimile No.

Teleprinter No.

3. Further observations, if necessary:

4. A copy of this notification has been sent to:

☒

the receiving Office

☐

the designated Offices concerned

☐

the International Searching Authority

☒

the elected Offices concerned

☐

the International Preliminary Examining Authority

☐

other:

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Authorized officer

François BAECHLER

Facsimile No.: (41-22) 740.14.35

Telephone No.: (41-22) 338.83.38

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9915581.4 **2 July 1999 (02.07.1999)** **GB**

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(72) Inventor; and

(75) Inventor/Applicant (*for US only*): **WALLENIOUS, Jukka** [FI/FI]; Keinutie 8 G 41, FIN-00940 Helsinki (FI).

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Published:

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- *Before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments.*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **METHOD AND DEVICE FOR AUTOMATIC INFORMATION SEARCH IN A NETWORK**

(57) Abstract: A terminal for use with an information network, said terminal comprising a register for storing content information defining the content of one or more sites in said information network to enable automatic location of sites having content corresponding to the content defining information.

WO 01/03403 A1



METHOD AND DEVICE FOR AUTOMATIC INFORMATION SEARCH IN A NETWORK

Field of the Invention

The present invention relates to a terminal for use with an information network. In particular, but not exclusively, the terminal is a mobile terminal and the information network is the worldwide web or Internet.

Background to the Invention

In wireless cellular telecommunication networks, the area covered by the network is divided into cells. Each cell is provided with a base station which is arranged to transmit signals to and receive signals from mobile stations in the cell associated with the respective base station.

The mobile station is able to move within the network and can be in any cell of the network. It is also possible for the mobile station to be used in networks operated by different operators. This is because network operators often have roaming agreements to permit mobile stations to operate in different networks.

Some mobile stations, particularly when in the form of a portable computer or used in conjunction therewith are able to access the Internet. Accordingly, a browser may be provided either in the portable computer or if used in conjunction with a mobile telephone, in the telephone itself, which stores bookmarks. These bookmarks identify websites which can be accessed via the Internet. Bookmarks are provided to allow a user easily to access websites which the user uses regularly. Some or all of these bookmarks may relate to local services. For example, one bookmark may

allow the user to access a website which includes train time table information for the city of London. This is useful if the user, for example lives in London. However, if the user were to go to Paris, the bookmark would still take the user to the website listing the train times for London. This is then of little use to the user when he is in Paris and requires train times for Paris.

Summary of the Invention

It is an aim of embodiments of the present invention to address the problems described hereinbefore.

According to one aspect of the present invention there is provided a terminal for use with an information network, said terminal comprising a register for storing content information defining the content of one or more sites in said information network to enable automatic location of sites having content corresponding to the content defining information.

This information can be used to assist in finding other sites corresponding to the content information defining the content of the site.

Preferably, the register is arranged to store information on the address of at least one site having the content defined by the content information. The terminal may be arranged to send a request for address information on a site which has a content defined by the content information. The request for the address information may request the address of a site which has the content defined by the content information and which additionally relates to the current location of the terminal. Alternatively, the request for address information

may request the address of a site which has the content defined by the content information and which additionally relates to a predetermined location.

The requested address may replace the current address in the register which is associated with the content information. Alternatively, the requested address may be stored in the register along with the home address associated with the same content information. The terminal may be arranged to select one of a plurality of requested addresses which are associated with the same content information. The terminal may be arranged to store a plurality of requested addresses which are associated with the same content information. The terminal may have means for permitting the user to select at least one of the stored addresses.

The terminal may be arranged to request at least one address of at least one site corresponding to content information stored in said register in response to the occurrence of at least one predetermined event. The at least predetermined event may be one or more of the following: change of location area of the terminal; the terminal registering with a new network; the terminal entering a different country; the terminal entering a new geographical location; and the terminal leaving a geographical location.

The terminal may be arranged to store the address of a server and a service provided by the server. Alternatively, the terminal may be arranged to store a uniform resource locator.

The terminal may be a wireless terminal or may be incorporated in a portable computer. The wireless terminal may be a mobile station.

The information network may be the internet and the terminal may have browser capabilities. The content information defining a site may be received in content response message headers from the site.

The terminal may be arranged to obtain information as to its position, said information being used to determine if the terminal is in an area associated with a given site. If the terminal is determined to have left said area, the register may be updated. The frequency with which the terminal obtains information on its position may be dependent on the area associated with a given site.

The terminal may be arranged to store the content information defining a site upon a user storing in the register the address of that site. The terminal may be arranged to obtain the content information defining a site from a classification service when a user stores in said register information on a site selected by the user.

According to a second aspect of the present invention, there is provided a register for use with an information network, said register storing content information, associated address information identifying sites which contain the content defined by said content information and location information identifying the geographic location with which the site defined by said address information is associated.

The information network may be the internet. The address information may comprise bookmarks. The register may be arranged to receive requests for associated address information. The requests may comprise content information and geographic location information. Geographic location

information may comprise: cell area; group of cell area; location area; group of location area; networks; groups of networks; country; and/or groups of countries.

The register may be arranged to output at least one address information associated with the requested content and geographic location information. The register may be arranged to output all of the address information associated with the requested content and geographic location information. Alternatively, the register may be arranged to select one or more of the address information associated with the requested content and geographic location information. The selection may be made at random or in accordance with rules for selecting the best match.

According to a third aspect of the present invention, there is provided a classification service provider, said classification service provider being arranged to classify the content of at least one site of an information network to enable automatic location of sites having a desired content.

The provider may provide at least one attribute of the content of said at least one site. The content can be classified using a pattern matching algorithm. Alternatively, a store is provided for storing classification information on the content of at least one site.

The information network may be the internet and the provider may comprise a search engine.

The classification service can of course be used in combination with the terminal described hereinbefore.

The classification service provider may be arranged to receive requests from the terminal for classification of the content of at least one site, address information of which is stored in the terminal. The request may be sent when the address information corresponding to said at least one site is first stored in the terminal. The terminal may be arranged to store classification information received from the provider, the classification information comprising the content information.

Embodiments of the present invention may comprise a system including a terminal as discussed hereinbefore, a classification service provider as discussed hereinbefore and/or a register as discussed hereinbefore.

Each site may be arranged to store content information, said terminal being arranged to obtain content information associated with the address and to store said content information in the register thereof.

According to a further aspect of the present invention, there is provided a device comprising: means for receiving information defining a first location in an information network, a classification service provider as described hereinbefore for classifying the content of the location; and means for identifying a new location in the information network having the same type of content as the first location.

According to a further aspect of the present invention, there is provided a device comprising means for receiving information defining a desired content of at least one location in an information network; means for receiving

information on the position of a requester; and means for determining a location in said network having said desired content which is relevant to the position of the requester.

Brief Description of the Drawings

For a better understanding of the present invention and as to how the same may be carried into effect, reference will now be made by way of example to the accompanying drawings in which:-

Figure 1 shows a schematic diagram of a cellular telecommunications network;

Figure 2 shows a mobile station embodying the present invention;

Figure 3 shows a schematic view of the mobile station of Figure 2 used in conjunction with an information network; and

Figure 4 shows schematically the elements of the cellular telecommunications network which allow access to the Internet.

Detailed Description of Embodiments of the Invention

Reference will first be made to Figure 1 in which three cells 2 of a cellular telecommunications network are shown. Each cell 2 is served by a respective base transceiver station 4. Each base transceiver station 4 is arranged to transmit signals to and receive signals from the mobile stations 6 located in the cell associated with the given base transceiver station. Likewise, each mobile station 6 is able to transmit signals to and receive signals from the respective base transceiver station 4.

The cellular telecommunications network shown in Figure 1 can use any suitable access technique. For example, the telecommunications network shown in Figure 1 may be in accordance with the GSM standard (Global System for Mobile Communications) or may be in accordance with the proposed UMTS standard (Universal Mobile Telecommunication Services). Alternatively, the network shown in relation to Figure 1 can be used in relation to any other standard.

Reference is now made to Figure 2 which shows a mobile station 6 embodying the present invention. The mobile station 6 is a browser capable phone or a wireless application phone which can access the Internet. Alternatively, the browser elements shown in the mobile telephone of Figure 2 can be incorporated in a portable computer which has an appropriate interface. The portable computer may be connected to a mobile station for wireless telecommunications. Alternatively, the computer may have wireless capabilities. The mobile station or the portable computer or both will be aware of network related events.

The mobile station 6 has a browser 10 which is arranged to store bookmarks 12. These bookmarks 12 comprise uniform resource locators URL and are usually independent of the server used by the user. The URL defines the address of a given website which the user wishes to regularly use. As an alternative to Internet uniform resource locators, the bookmarks may be arbitrary service addresses specifying a server and a service within that server. In this latter case, the bookmarks need not conform to the Internet URL format. In some arrangements the bookmark storage in association with the browser may be stored remotely to a server within said information network.

Associated with at least some of the bookmarks are a set of attributes 14. These attributes 14 define the content of the address defined by the uniform resource locator, that is the bookmark. For example, if the bookmark 12 defines a website which includes train time table information for London, the attribute associated with the bookmark will identify the fact that it is train time table information. The attributes 14 may be stored together with the bookmark 12 or separately. In the latter case, there may be some association information to associate the attributes with the respective bookmarks.

The browser has several elements and is able to understand hypertext code which is received from the server. The browser is also able to execute JAVA or similar languages. The browser is able to receive from the server executable content such as JAVA. The executable content may be in the form of code that is executed in a virtual machine or may be native machine code. The browser may be provided with application programming interfaces which allow the executable content to access functionalities within the mobile station 6 or computer.

Reference will now be made to Figure 3. In Figure 3, the mobile station 6 is shown as being connected to a worldwide webserver 16 via the Internet 15. How this may be achieved will be described in more detail. The server 16 provides a number of websites. For at least some of these websites, attribute information will be stored. This attribute information is stored at the website. The attributes may be associated with the respective bookmarks. These attributes may alternatively be stored in a separate register away from the website itself, for example in a central register. However, in preferred embodiments of the present invention,

the attributes are stored at the website associated with the given bookmark.

In an embodiment of the invention, the attributes are received from the website in content response message headers, for example HTTP-response message headers in the case of HTTP protocol (Hypertext transfer protocol).

The type of the website or the type of the uniform resource locators to be stored as bookmarks may be classified using a classification service. In one embodiment of the invention, the classification service is contacted whenever the user records a new bookmark in the bookmark list in association with the browser. In the alternative, the classification service may be contacted in response to a user request or automatically when a URL is selected when the user is attempting to access a given web site. The classification service provides one or more attributes describing the type of the uniform resource locator. These attributes are then associated with the bookmark for the uniform resource locator. The classification service is provided in association with the uniform resource locator and checks the content of the location associated with that URL. The classification service may be provided in the mobile station, with the register as a separate node in the network or at any other suitable location.

In one embodiment of the invention, the content may be classified using a pattern matching algorithm which counts the occurrences of words and/or data tokens to determine the type of the service. The classification process may also involve the use of neural algorithms to analyse picture or moving picture content. The classification algorithm may be taught using trial material to recognise different,

frequently occurring service types. In an alternative embodiment of the invention, the classification service simply stores a URL or for a part of a URL the descriptive attributes. The attributes associated with the URL may have been entered manually for a given set of commonly used URLs. In another embodiment of the invention, the classification service may comprise an Internet search engine, which browses the internet for the occurrence of keywords or tokens matching one or more attributes. The URLs containing these keywords or tokens may then be analysed more closely to provide a more reliable classification. As a result of the browsing done by the search engine, the URL attribute classification can be provided for a set of URLs. The classification may be associated with only a part of the URL e.g. the part identifying the server.

In response to a URL classification request, the classification service returns the attributes associated with the URL. The classification service may be located either in the user terminal or on a separate server node or in association with the register.

When a user first defines a bookmark and then accesses the associated website, the attributes associated with the site are sent to the mobile station which then stores those attributes in association with the respective bookmark 12. The attribute information may be obtained automatically in response to the user accessing the website or may be accessed in response to a specific request. The specific request may be issued during the course of bookmark recording.

These attributes include information as to the content of the website. In preferred embodiments of the present

invention, predefined categories are provided for classifying the content of the websites. Information on the location relevant to the website may be provided either as part of the attribute information or separate therefrom.

Information on the location of a mobile station is available in most if not all of the current standards. Firstly, it will be known in which network a mobile station is located, i.e. whether it is in a home network or in a visiting network. Additionally, the mobile station will also know where it is within the network. This information may just be the cell in which the mobile station is located or may be more detailed information. The geographic position of the mobile station may also be known. When the mobile station has moved, the network automatically notes that the mobile station has moved. In, for example the United States, it is a legal requirement that the location of the mobile station be known for emergency purposes. Information on the location of mobile stations is used for network management.

As shown in Figure 3, a bookmark service register 20 is provided. This register stores for each set of attributes, at least some of the bookmarks of websites which have these attributes along with location information indicating the location to which the respective website relates. This location information may be part of the attribute information or separate therefrom. This register may be part of the cellular telecommunications network of the mobile station or may be part of the Internet. In an alternative embodiment of the invention, a bookmark service register is provided for each given geographic area so that the website related location information is not necessarily stored in the bookmark service register. The address of the bookmark service associated with the geographic area may be provided

for example in cell or network information broadcasts or messages issued from the network in response to location updating or registration.

When the location of the mobile station 6 incorporating the browser 10 changes, the browser 10 automatically sends an update request to the bookmark service requesting updated bookmarks. Alternatively, the user may send a request when the user has moved or requires new local information. The request will include or will be followed by the attributes 14 of the bookmarks 12 which have been stored in the browser 10. The bookmark service 20 receives the request for an update and the attributes. The bookmark service will also receive information as to the current location of the mobile station from the network to which the mobile station is currently attached.

In an alternative embodiment of the invention, the bookmark service is provided with just the bookmarks. In this embodiment, the bookmark service will perform the classification of the URLs to provide matching with local alternatives.

In a further embodiment of the present invention, the bookmark service is just provided with sets of attributes and provides local bookmarks corresponding to these attributes.

In addition to providing bookmarks to requesting terminals, the bookmark service also performs a periodic checking of the bookmarks stored in it. If the URLs in the bookmarks are detected as being unreachable in a given number of periodic checks, they are removed from the bookmark service register or they get a lower match rating.

The bookmark service 20 will find the set of bookmarks which have the attribute information received from the mobile station. From this set of bookmarks, the bookmarks having the location information matching the location information received from the network are selected. This may consist of one or more bookmarks. One of the bookmarks may be selected. Alternatively two or more or even all of the bookmarks are selected from the set. These selected bookmarks will define the websites which correspond to the current location of the mobile station.

If the attributes of the bookmark stored in the mobile station relate to train times, the bookmark service 20 will use that attribute information and the location of the mobile station in order to ascertain what the new bookmark should be. For example, if the mobile station is now in Paris, the bookmark service will select the bookmark for the website relating to Paris train times.

The bookmark service 20 will send the selected new bookmark(s) for the current location of the mobile station back to the mobile station.

The new bookmark(s) received from the bookmark service may replace the existing bookmark or may be stored as an additional bookmark associated with the old bookmark and/or the attribute information. The latter arrangement has the advantage that when the mobile station returns to its original location, the need to update the bookmarks can be avoided. In the arrangements where the bookmark storage in association with the browser is located remotely on a server, the update request to the bookmark service may be relayed via the bookmark storage server. The bookmark

storage should not be confused with the bookmark service providing information on other equivalent sites, the bookmark storage is just a remotely stored browsers bookmark list. The bookmark storage is as described hereinbefore preferably located in the mobile station but can be provided elsewhere.

As mentioned hereinbefore it may be possible that there is more than one bookmark which satisfies the required attribute and location information. In this case, the best match may be selected by the bookmark service and forwarded to the browser of the mobile station. Alternatively, the bookmark may be selected at random from the available bookmarks which satisfy the required criteria. The browser may be arranged to receive all of the available bookmarks and the user may be able to select the required bookmark.

The location information may be passed to the bookmark service 20 by the mobile station or may be provided by a control element.

The different bookmarks may be arranged into sets such as country, city and network changes. For example, with country bookmarks, a new bookmark would be sought if the mobile station changed country. Likewise, with city specific bookmarks, the bookmarks could only be updated when the mobile station entered a new city. The sets may even be quite localised for use with for example local bus times and cover the area of a few cells. The sets may even include one which is based on the actual location of the mobile station where the bookmark(s) are updated each time the mobile station moves and accesses the worldwide web. This, for example, could be used to provide timetable information associated with a specific bus stop. The bookmarks in a

given set may be updated at the same time or at different times.

In one embodiment of the invention, one or more trigger areas may be provided in association with one or more bookmarks. When a location dependent bookmark is provided from the bookmark service register, the bookmark service register may provide one or more trigger areas associated with that bookmark. Where such trigger areas are provided, the position of the mobile station is checked periodically to see it has left one trigger area and/or entered another trigger area. The periodic checking of the mobile station position may involve geographic positioning procedures. The trigger areas may also define how often the position of the mobile station is checked. The frequency of checking may be deduced automatically by the mobile based on the size of the trigger area. The trigger areas may be geographic areas defined by co-ordinates, individual cells, cell groups, location areas, location area groups, networks or groups of networks, a country, set of countries etc.

Whenever the user moves outside a given trigger area, the bookmarks corresponding to the trigger area are sent to the bookmark service register for updating. Alternatively, the bookmarks may be treated in the browser as old and are indicated as such to the user.

Reference is now made to Figure 4 which shows how a connection is established between a mobile station 6 and a website 16. The mobile station is connected to a base station subsystem 8 which includes a base station. The base station subsystem 8 is in turn connected to a serving GPRS support node SGSN 24 which in turn is connected to a gateway GPRS support node GGSN 26. The gateway GPRS support node GGSN 26

is coupled to the Internet 28, via which a connection can be established with a given worldwide website 16 and the bookmark service 20. The arrangement shown in Figure 4 is in the context of a GPRS (General Packet Radio Service) standard. The mobile station 6 has an air interface link with the base station subsystem 22. The base station subsystem 22 forwards data to and from the mobile station 6. The serving GPRS support node keeps track of the mobile stations location and performs security functions and access control. The gateway GPRS support node 28 acts as a gateway between the GPRS network and the Internet 20.

In a modification to the embodiment described hereinbefore, the browser may only store attribute information, without any bookmarks. In this modification, every time a user selects a given set of attribute information, the relevant bookmark(s) are obtained from the bookmark service.

The embodiment described hereinbefore has described the connection of a mobile station to a website accessible via the Internet. However, it should be appreciated that embodiments of the present invention can be used with any other suitable information network.

The position of the mobile station can be determined using any appropriate method, for example offset time difference, satellite positioning etc.

Embodiments of the present invention have been described in the context of a mobile station or portable computer. However, it should be appreciated that the embodiments of the invention may be used with fixed terminals which may be wired or wireless. For example, if a set of attributes was prestored in the terminal equipment when it is sold, the

correct websites associated with the stored attributes for the location of the fixed terminal could be obtained without difficulty.

In one modification to the described embodiment of the invention, the user may be able to input a desired location and obtain information on the websites associated with that location. This desired location may be the same or different to the current location of mobile station. For example if the user intends to visit a given location, he can obtain information on that location in advance.

It should be appreciated that embodiments of the present invention can be used with any suitable wireless telecommunications system including spread spectrum systems such as code division multiple access, time division multiple access and frequency division multiple access or hybrids thereof.

CLAIMS:

1. A terminal for use with an information network, said terminal comprising a register for storing content information defining the content of one or more sites in said information network to enable automatic location of sites having content corresponding to the content defining information.
2. A terminal as claimed in claim 1, wherein said register is arranged to store information on the address of at least one site having the content defined by said content information.
3. A terminal as claimed in claim 1 or 2, wherein said terminal is arranged to send a request for address information on a site which has the content defined by said content information.
4. A terminal as claimed in claim 3, wherein said request for address information requests the address of a site which has the content defined by the content information and which additionally relates to the current location of the terminal.
5. A terminal as claimed in claim 3, wherein said request for address information requests the address of a site which has the content defined by the content information and which additionally relates to a predetermined location.
6. A terminal as claimed in claim 4 or 5 when appended to claim 2, wherein said the requested address replaces the current address in the register which is associated with the content information.

7. A terminal as claimed in claim 4 or 5 when appended to claim 2, wherein said requested address is stored in the register along with a home address associated with the same content information.

8. A terminal as claimed in any of claims 4 to 7, wherein said terminal is arranged to select one of a plurality of requested addresses which are associated with the same content information.

9. A terminal as claimed in any one of claims 4 to 7, wherein said terminal is arranged to store a plurality of requested addresses which are associated with the same content information.

10. A terminal as claimed in claim 9, wherein said terminal has means for permitting the user to select at least one of said stored addresses.

11. A terminal as claimed in any one of the preceding claims, wherein said terminal is arranged to request at least one address of at least one site corresponding to content information provided by the terminal in response to occurrence of at least one predetermined event.

12. A terminal as claimed in claim 11, wherein said at least one predetermined event comprises one or more of the following:

change of location area of the terminal; the terminal registering with a new network; the terminal entering a different country; the terminal entering a new geographical location; and the terminal leaving a geographical location.

13. A terminal as claimed in claim 11 or 12 wherein said addresses associated with the geographic area are provided in cell or network information broadcasts.

14. A terminal as claimed in any preceding claim, wherein the terminal is arranged to store the address of a server and a service provided by said server.

15. A terminal as claimed in claim 2 or any of claims 3 to 12 when appended thereto, wherein said address is in accordance with the uniform resource locator format.

16. A terminal as claimed in any preceding claim, wherein said terminal is a wireless terminal.

17. A terminal as claimed in any preceding claim, wherein said terminal is incorporated in a portable computer.

18. A terminal as claimed in any of claims 1 to 16, wherein said terminal is a mobile station.

19. A terminal as claimed in any preceding claim, wherein said information network is the Internet and said terminal has browser capabilities.

20. A terminal as claimed in claim 19, wherein said content information defining a site is received in content response message headers from the site.

21. A terminal as claimed in claim 19 or 20 wherein said register provides bookmark storage in association with the browser.

22. A terminal as claimed in claim 3 or any claim appended thereto, wherein said terminal is arranged to obtain information as to its position, said information being used to determine if the terminal is in an area associated with a given site.

23. A terminal as claimed in claim 22, wherein said if said terminal is determined to have left said area, the register is updated.

24. A terminal as claimed in claim 22 or 23, wherein the frequency with which the terminal obtains information on its position is dependent on the area associated with a given site.

25. A terminal as claimed in claim 2 or any claim appended thereto, wherein said terminal is arranged to store the said content information defining a site when a user stores in said register the address of that site.

26. A terminal as claimed in any of the previous claims, wherein said terminal is arranged to obtain the said content information defining a site from a classification service when a user stores in said register information on a site selected by the user.

27. A register for use with an information network, said register storing content information, associated address information identifying sites which contain the content defined by said content information and location information identifying the geographic location with which the site defined by said address information is associated.

28. A register as claimed in claim 27, wherein said information network is the Internet.

29. A register as claimed in claim 27 or 28, wherein said address information comprises bookmarks.

30. A register as claimed in claim 27, 28 or 29, wherein said register is arranged to receive requests for associated address information.

31. A register as claimed in claim 30; wherein said requests comprise content information and geographic location information.

32. A register as claimed in claim 31, wherein said geographic location information comprises:

cell area; group of cells area; location area; group of location area; networks; groups of networks; country; and/or groups of countries.

33. A register as claimed in claim 30, 31 or 32, wherein said register is arranged to output at least one address information associated with the requested content and geographic location information.

34. A register as claimed in claim 33, wherein said register is arranged to output all of the address information associated with the requested content and geographic location information.

35. A register as claimed in claim 33, wherein said register is arranged to select one or more of the address information associated with the requested content and geographic location information.

36. A register as claimed in claim 35, wherein the selection is made at random.

37. A register as claimed in claim 36, wherein said selection is made in accordance with rules for selecting the best match.

38. A classification service provider, said classification service provider being arranged to classify the content of at least one site of an information network to enable automatic location of sites having a desired content.

39. A provider as claimed in claim 38, wherein said provider provides at least one attribute of the content of said at least one site.

40. A provider as claimed in claim 38 or 39, wherein said content is classified using a pattern matching algorithm.

41. A provider as claimed in claim 38 or 39, wherein a store is provided for storing classification information on the content of at least one site.

42. A provider as claimed in claim 38 or 39, wherein said information network is the Internet and the provider comprises a search engine.

43. A terminal in combination with a classification service provider as claimed in any of claims 38 to 42.

44. A combination as claimed in claim 43, wherein said classification service provider is arranged to receive requests from the terminal for classification of the content

of at least one site, address information of which is stored in the terminal.

45. A combination as claimed in claim 44, wherein said requests are sent when said address information corresponding to said at least one site is first stored in said terminal.

46. A combination as claimed in claim 44 or 45, wherein said terminal is arranged to store classification information received from said provider, said classification information comprising said content information.

47. A system comprising a terminal as claimed in any one of claims 1 to 24 and/or a register as claimed in any one of claims 27 to 37.

48. A system as claimed in claim 47, wherein each site is arranged to store said content information, said terminal being arranged to obtain content information associated with an address and to store said content information in the register thereof.

49. A device comprising;
means for receiving information defining a first location in an information network;
a provider as claimed in any of claims 38 to 42 for classifying the content of said location; and
means for identifying a new location in said information network having the same type of content as said first location.

50. A device comprising:

means for receiving information defining a desired content of at least one location in an information network;
means for receiving information on the position of a requester; and
means for determining a location in said network having said desired content which is relevant to the position of the requester.

51. A method comprising the steps of:

receiving information defining a first location in an information network;

classifying the content of the first location;

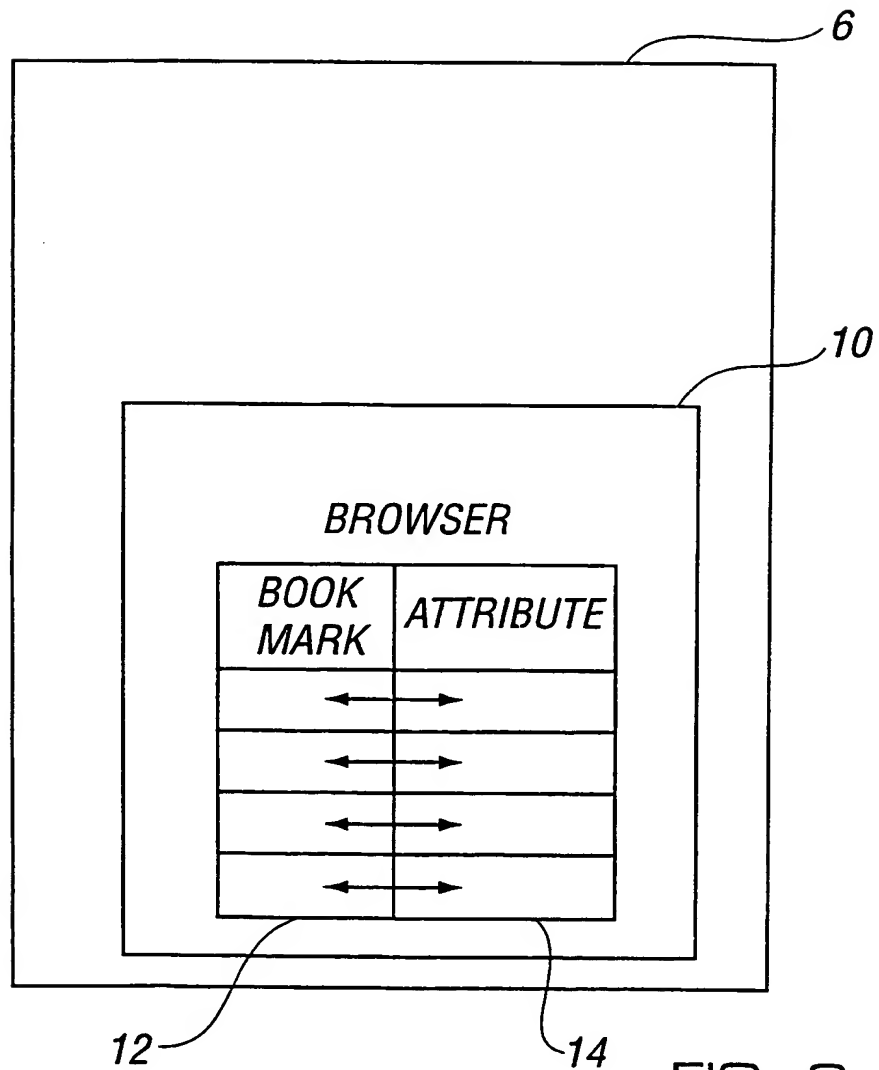
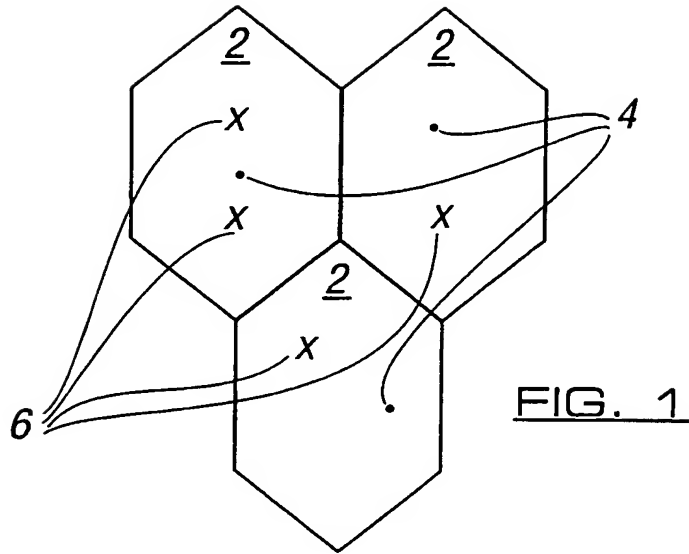
identifying at least one other location having the same content as the first location.

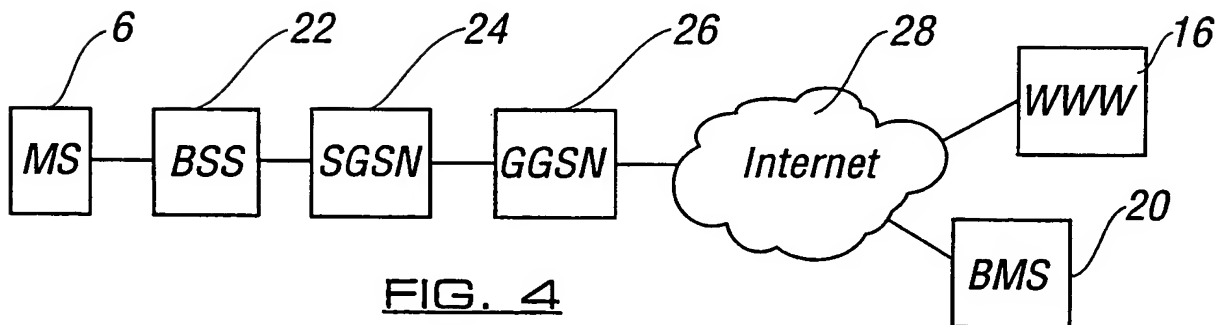
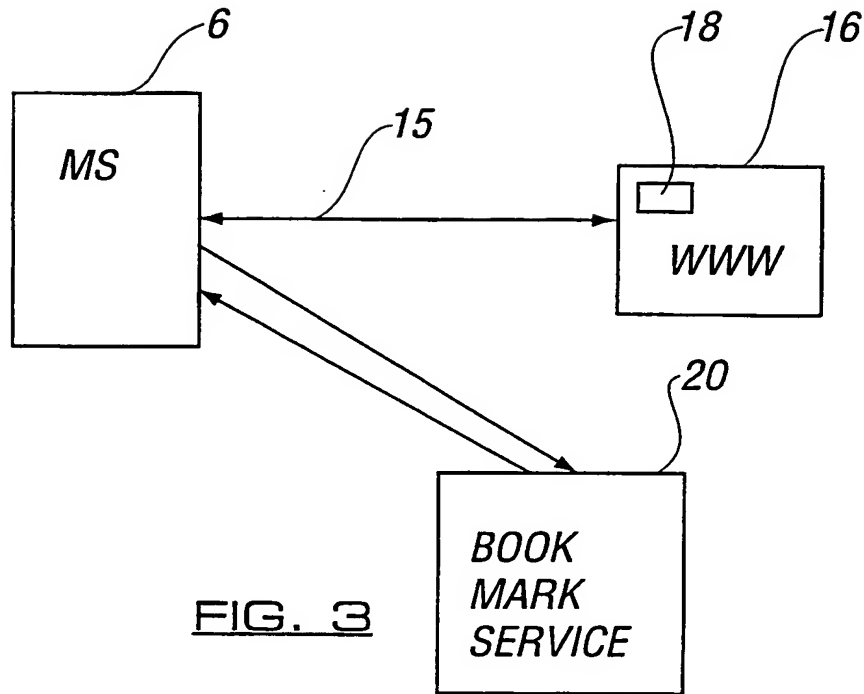
52. A method of comprising the steps of:

providing content information relating to at least one location on an information network receiving geographic location information; and

obtaining address information of at least one site having the content defined by the content information related to said geographic position information.

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INTERNATIONAL SEARCH REPORT

Internat. Application No.

PCT/EP 00/06119

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H04L29/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04L G01C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, IBM-TDB, INSPEC, COMPENDEX

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 99 12104 A (TELEFONAKTIEBOLAGET LM ERICSSON) 11 March 1999 (1999-03-11) page 11, line 21 -page 13, line 22 -----	1,27,38, 43,47, 49-52
A	KELLER R M ET AL: "A bookmarking service for organizing and sharing URLs" COMPUTER NETWORKS AND ISDN SYSTEMS,NL,NORTH HOLLAND PUBLISHING. AMSTERDAM, vol. 29, no. 8-13, page 1103-1114 XP004095308 ISSN: 0169-7552 page 1105, left-hand column, line 22 -page 1107, right-hand column, line 17 -----	1,27,38, 43,47, 49-52

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

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"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

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INTERNATIONAL SEARCH REPORT

Information on patent family members

Interns I Application No

PCT/EP 00/06119

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9912104 A	11-03-1999	FI 973600 A	05-03-1999
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